Appl. No. 09/903,982
Amdt. dated March 3, 2005
Amendment under 37 CFR 1.116 Expedited Procedure
Examining Group 2683

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (Currently Amended) A method for use in providing services based on the locations of mobile units in a wireless communications network, said wireless network including a switch structure for use in selectively routing communications between network users and a processing platform associated with the switch structure, said method comprising the steps of:

providing a location-based services application running, at least in part, on the processing platform associated with the switch structure;

defining at least one geographic reference service zone boundary for said location-based service application, wherein said service zone boundary passes through at least one of a plurality of coverage areas of the wireless communications network for said location based services application;

storing an identifier for a mobile unit <u>associated with a mobile subscriber, a</u> <u>location of said mobile unit being of interest to a system user other than said mobile subscriber</u>;

monitoring [[a]] <u>said</u> location of said mobile unit, using said location-based services application and said identifier of said mobile unit, to identify a crossing of said service zone boundary by said mobile unit; and

transmitting service information <u>to said system user</u> regarding said mobile unit in response to said crossing of said service zone boundary by said mobile unit.

2.   (Currently Amended) A method as set forth in Claim 1, wherein said step of defining said service zone boundary comprises receiving subscriber specific information from [[a]] <u>said system</u> user regarding said service zone boundary and said step of storing comprises indexing information regarding said service zone boundary to said identifier.

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3.   (Currently Amended) A method as set forth in Claim 1, wherein said step of defining comprises identifying a geographical area for which [[a]] said system user desires to receive notification upon one of :

a)   entry of said mobile unit into said identified geographical area; or

b)   exit of said mobile unit from said identified geographical area; and said step of transmitting comprises providing notification to said system user of said entry or exit.

4.   (Original) A method as set forth in Claim 1, wherein said step of defining comprises receiving zone location information regarding a service zone referenced to a first topology system and expressing said zone location information in terms of a second topology system of said location based services application.

5.   (Original) A method as set forth in Claim 4, wherein said first topology system comprises a street grid.

6.   (Original) A method as set forth in Claim 4, wherein said second topology system comprises one of a geographical coordinate system and a system of wireless network subdivision identifiers.

7.   (Previously Presented) A method as set forth in Claim 1, wherein said step of providing a location-based services application comprises providing an application for allowing a person of authority to monitor the movements of one of a person or a vehicle associated with said mobile unit.

8.   (Previously Presented) A method as set forth in Claim 1, wherein said step of providing a location-based services application comprises providing an application for setting a billing parameter for use of said wireless network by said mobile unit.

9.   (Previously Presented) A method as set forth in Claim 1, wherein said step of monitoring comprises storing first location information regarding a first location of said mobile unit at a first time, obtaining second location information regarding a second location of

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said mobile unit at a second time and comparing said first location information to said second location information to identify said crossing of said service zone boundary by said mobile unit.

10. (Original) A method as set forth in Claim 9, wherein said first location information comprises a first zone identifier for a particular service zone and said second location information comprises a second zone identifier for a particular service zone, and said step of comparing comprises determining whether said first zone identifier is the same as said second zone identifier.

11. (Canceled)

12. (Previously Presented) A method as set forth in Claim 1, wherein said mobile unit is a telephone and said step of storing an identifier comprises storing an MIN/ESN.

13. (Currently Amended) A method as set forth in Claim 1, wherein said step of transmitting service information further comprises transmitting said service information to said mobile unit.

14. (Currently Amended) A method as set forth in Claim 1, wherein said step of transmitting service information comprises transmitting said service information to a data network node associated with said ~~subscriber~~ system user, said data network node being separate from said mobile unit.

15. (Previously Presented) A method as set forth in Claim 1, wherein said step of transmitting service information comprises transmitting said service information to a separate application that is registered with said location-based services application to receive boundary crossing information regarding said mobile unit.

16. (Currently Amended) A method as set forth in Claim 1, wherein said step of transmitting service information comprises transmitting a message to said system user providing notice of a boundary crossing event.

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17.   (Original) A method as set forth in Claim 16, wherein said message comprises one of a voice, text or graphical message.

18.   (Original) A method as set forth in Claim 1, wherein said step of transmitting service information comprises transmitting one of local service information and local emergency condition information to said mobile unit.

19.   (Original) A method for use in providing services, based on the locations of mobile units in a wireless network, comprising the steps of:

establishing a location based services system, including a processing platform and data storage associated with the processing platform;

said location based services system being interconnected to a network location finding system for receiving network location information therefrom regarding the location of the mobile units within the wireless network, said network location finding system being operative for determining said network location information regarding said mobile units based on locations of the mobile units and known locations of network structure in said wireless network;

said location based services system further being interconnected to a system user via a communication network including a switch structure for routing communications based on an address whereby user information can be transmitted from said location based services system to said user by associating said user information with a user address;

said location based services system further being associated with a data input port for receiving information for storage in said data storage and for use by said location based services system;

first receiving, via said data input port, service zone information identifying a geographic service zone including at least one service zone boundary;

first storing said service zone information in said data storage of said location based service system;

second receiving, via said data input port, an identifier identifying a mobile unit of interest to said system user;

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second storing said identifier in said data storage of said location based service system;

third receiving, from said network location finding system, said network location information including mobile unit location information regarding said mobile unit of interest;

third storing said mobile unit location information in said data storage of said location based service system;

first operating said location based service system to 1) monitor locations of said mobile unit of interest over a time period, 2) make a comparison based on one or more of said monitored locations of mobile unit location to said service zone boundary, and 3) based on said comparison, identify a crossing of said service zone boundary by said mobile unit of interest; and

second operating said location based service system to 1) generate service information in response to said identified crossing of said service zone boundary, 2) establish a user communication including said service information and information identifying said user address, and 3) transmitting said user communication to said system user;

wherein said system user receives service information triggered by said crossing of said service zone boundary.

20.   (Previously presented) A method for use in providing services based on the locations of mobile units in a wireless communications network, said wireless network including a switch structure for use in selectively routing communications between network users and a processing platform associated with the switch structure, said method comprising the steps of:

providing a location based services application running, at least in part, on the processing platform associated with the switch structure;

defining at least one geographic reference for said location based services application;

storing an identifier for a mobile unit;

monitoring a location of said mobile unit, using said location based services application and said identifier of said mobile unit, to identify an attainment of a predetermined

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relationship of said mobile unit relative to said geographic reference, said attainment being defined by a change of status with respect to said predetermined relationship; and

transmitting service information regarding said mobile unit in response to said attainment of said predetermined relationship of said mobile unit relative to said geographic reference,

wherein said step of monitoring comprises storing first location information regarding a first location of said mobile unit at a first time, obtaining second location information regarding a second location of said mobile unit at a second time and comparing said first location information to said second location information to identify said attainment of said predetermined relationship, and

wherein said step of monitoring further comprises defining a geometrical element interconnecting a first location of said first location information and a second location of said second location information and determining whether there is an intersection between said geometrical element and a boundary of a service zone.

21.   (Previously Presented) A method as set forth in claim 1, wherein the location-based services application utilizes network assisted GPS to provide location information of said mobile unit.

22.   (Previously Presented) A method as set forth in claim 1, wherein said step of transmitting service information comprises transmitting service information to a network user separate from a user of said mobile unit.

23.   (Currently Amended) A method for use in providing services based on the locations of mobile units in a wireless communications network, said method comprising the steps of:

providing a location-based services application running, at least in part, on a processing platform associated with said wireless communications network;

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defining at least one service zone boundary passing through at least one of a plurality of coverage areas of said wireless communications network;

storing an identifier for a mobile unit associated with a mobile subscriber, a location of said mobile unit being of interest to a system user other than said mobile subscriber;

monitoring [[a]] said location of said mobile unit, using said location-based services application and said identifier of said mobile unit;

identifying a crossing of said service zone boundary using a mathematical analysis; and

transmitting service information to said system user regarding said mobile unit in response to said crossing of said service zone boundary.

24. (Currently Amended) A method as set forth in claim 23 A method for use in providing services based on the locations of mobile units in a wireless communications network, said method comprising the steps of:

providing a location-based services application running, at least in part, on a processing platform associated with said wireless communications network;

defining at least one service zone boundary passing through at least one of a plurality of coverage areas of said wireless communications network;

storing an identifier for a mobile unit;

monitoring a location of said mobile unit, using said location-based services application and said identifier of said mobile unit;

identifying a crossing of said service zone boundary using a mathematical analysis; and

transmitting service information regarding said mobile unit in response to said crossing of said service zone boundary, wherein said mathematical analysis comprises:

storing first location information regarding a first location of said mobile unit at a first time;

storing second location information regarding a second location of said mobile unit at a second time; and

defining a geometrical element connecting said first location and said second location and determining whether said geometrical element intersects said service zone boundary.

25.   (Currently Amended) ~~A method as set forth in claim 23~~ A method for use in providing services based on the locations of mobile units in a wireless communications network, said method comprising the steps of:

providing a location-based services application running, at least in part, on a processing platform associated with said wireless communications network;

defining at least one service zone boundary passing through at least one of a plurality of coverage areas of said wireless communications network;

storing an identifier for a mobile unit;

monitoring a location of said mobile unit, using said location-based services application and said identifier of said mobile unit;

identifying a crossing of said service zone boundary using a mathematical analysis; and

transmitting service information regarding said mobile unit in response to said crossing of said service zone boundary, wherein said mathematical analysis is an overlapping area analysis comprising:

defining an uncertainty area surrounding said location of said mobile unit; and

determining whether an intersection area between said uncertainty area and a service area bordered by said service zone boundary is nonzero.

26.   (Currently Amended) ~~A method as set forth in claim 6,~~ A method for use in providing services based on the locations of mobile units in a wireless communications network, said wireless network including a switch structure for use in selectively routing

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communications between network users and a processing platform associated with the switch

structure, said method comprising the steps of:

providing a location-based services application running, at least in part, on the

processing platform associated with the switch structure;

defining at least one geographic reference service zone boundary for said

location-based service application, wherein said service zone boundary passes through at least

one of a plurality of coverage areas of the wireless communications network for said location

based services application;

storing an identifier for a mobile unit;

monitoring a location of said mobile unit, using said location-based services

application and said identifier of said mobile unit, to identify a crossing of said service zone

boundary by said mobile unit; and

transmitting service information regarding said mobile unit in response to said

crossing of said service zone boundary by said mobile unit, wherein said step of defining

comprises receiving zone location information regarding a service zone referenced to a first

topology system and expressing said zone location information in terms of a second topology

system of said location based services application, wherein said second topology system

comprises one of a geographical coordinate system and a system of wireless network subdivision

identifiers, and ~~wherein said second topology~~ is an approximation of said first topology.

27.   (Previously Presented) A method as set forth in claim 26, wherein said

second topology comprises said plurality of coverage areas intersecting said first topology.

28.   (Previously Presented) A method as set forth in claim 27, wherein said

second topology is defined by a plurality of cell sectors associated with cell sector antennas.